	Application No.	Applicant(s)
Notice of Allowability	10/765,942	SAITO, KAZUHIRO
	Examiner	Art Unit
	LUU MATTHEW	2676

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to *the IDS statement filed October 5, 2004*.

2. ☒ The allowed claim(s) is/are *1-12*.

3. ☒ The drawings filed on *29 January 2004* are accepted by the Examiner.

4. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a) ☒ All   b) ☐ Some*   c) ☐ None of the:

        1. ☒ Certified copies of the priority documents have been received.

        2. ☐ Certified copies of the priority documents have been received in Application No. _____ .

        3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

    * Certified copies not received: _____ .

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application. **THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.

6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.

    (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached

        1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____ .

    (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____ .

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)

2. ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)

3. ☒ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date 10/5/2004

4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material

5. ☐ Notice of Informal Patent Application (PTO-152)

6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____ .

7. ☐ Examiner's Amendment/Comment

8. ☒ Examiner's Statement of Reasons for Allowance

9. ☐ Other _____ .

MATTHEW LUU
PRIMARY EXAMINER

Reasons for Allowance

The following is an examiner's statement of reasons for allowance:

None of the prior art made of record teaches or suggests a color separation table generation method of generating a color separation table used to separate an input color into a plurality of color agent colors, comprising:

a first table generation step of generating color separation data on a first line that connects white and black points in the color separation table;

a second table generation step of generating color separation data on a plurality of second lines each of which connects the white point and each of primary color points each expressed by one of the color agent colors and secondary color points each expressed by two of the color agent colors;

a third table generation step of generating color separation data on a plurality of third lines each of which connects each of the primary and secondary color points and the black point;

a fourth table generation step of generating color separation data on a plurality of fourth lines each of which connects the primary and secondary color points; and

an interpolation step of generating color separation data at grid points inside a three-dimensional color space by an interpolation process based on the color separation data on the first to fourth lines,

wherein the interpolation step includes a step of executing an interpolation process using a finite element method for each triangular plane specified on the color space.

Any comments considered necessary by applicant must be submitted no later

than the payment of the issue fee and, to avoid processing delays, should preferably

accompany the issue fee. Such submissions should be clearly labeled "Comments on

Statement of Reasons for Allowance."

Conclusion

The prior art made of record and not relied upon is considered pertinent to

applicant's disclosure.

-The closest prior art, Dalrymple et al (US 2003/007216) disclose a color

conversion method with hue straightening using multiple look-up tables (LUTs) and

interpolation. Dalrymple discloses (Fig. 1) a first line segment that connects white and

black points (12 and 14); Fig. 9 shows the upper half hue straightening process which

connects the white point and each of primary colors (C,M,Y) and secondary color points

(R,G,B); and Fig. 5 shows the lower half hue straightening and black generation which

connects each of the primary (C,M,Y) and secondary color points (R,G,B) to the black

point (Bk).

However, Dalrymple et al fail to disclose the claimed "a fourth table generation

step of generating color separation data on a plurality of fourth lines each of which

connects the primary (C,M,Y) and secondary (R,G,B) color points; and an interpolation

step of generating color separation data at grid points inside a three-dimensional color

space by an interpolation process based on the color separation data on the first to

fourth lines". As the matter of fact, Dalrymple et al disclose that there are no

interpolation grid points between the pure color point and the white point to correct for

the hue shifting region. See Dalrymple, section (89).

-Inoue (6,571,010) discloses (Figs. 1 and 2) a color conversion apparatus in

which an input color space is divided into unit solids, lattice point data constituting the

unit solids are stored in a three-dimensional color conversion table memory, and an

interpolation calculation is performed by use of the color conversion of a color image

signal expressed by various color signals. Figure 2 shows reference numeral 118

represents an interpolation circuit, that is, the triangular prism and tetrahedron

interpolation calculator for performing linear interpolation. However, Inoue fails to

disclose the first to fourth table generation steps of generating color separation data on

a plurality of first to fourth lines; and an interpolation step of generating color separation

data at grid points inside a three-dimensional color space by an interpolation process

based on the color separation data on the first to fourth lines.

-Kasson et al (5,390,035) disclose a color conversion method for converting an

input color to an output color using a multi-variable function having an input domain in a

first three-dimensional color space and output range in a second m-dimensional color

space. The conversion from input to output color subdivides the input domain into

polyhedron defined by planar grids of points connected to form a plurality of triangles.

However, Kasson et al fail to disclose the first to fourth table generation steps of

generating color separation data on a plurality of first to fourth lines; and an interpolation

step of generating color separation data at grid points inside a three-dimensional color

space by an interpolation process based on the color separation data on the first to

fourth lines.

-Yamaguchi (6,587,223) discloses (Fig. 14) a color signal converter comprises

first, second and third color conversion tables (4,5,6), a color conversion table selector

(9), and a color conversion table data interpolation section (10).

-Shimizu et al (6,292,195) disclose a color signal selection apparatus for

selecting irregularly distributed output color points of one color space surrounding an

inputted color point of another color space.

-Zeng et al (US 2004/0141642) disclose a color space conversion technique

using interpolation.

-Ozeki (6,072,464) discloses a single color characteristic indicating a relation

between the signal value and the color material transfer amount and a color mixing

characteristic indicating a relation between each color material transfer amount (ink

amount) of a plurality of inks and the chromaticity are obtained.

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to LUU MATTHEW whose telephone number is (703) 305-

4850. The examiner can normally be reached on Flexible Schedule.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, BELLA MATTHEW can be reached on (703) 308-6829. The fax phone

number for the organization where this application or proceeding is assigned is 703-

872-9306.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free).

M. Luu

MATTHEW LUU
PRIMARY EXAMINER